

1. A composition comprising:
- 5 (a) polymer particles having
- (1) a one millimeter penetration temperature of less than about 75°C as determined by thermal mechanical analysis; or
- (2) an unconfined yield strength of greater than about 15 pounds per square foot (73 kilograms per square meter); or
- (3) both (1) and (2);
- 10 (b) an effective amount of an anti-blocking agent; and
- (c) an effective amount of a binding agent capable of binding the anti-blocking agent to the polymer particles.
- 15 2. The composition of Claim 1 wherein the polymer comprises a substantially random interpolymer comprising:
- 15 (a) polymer units derived from:
- 20 (i) at least one vinyl or vinylidene aromatic monomer; or
- (ii) a combination of at least one vinyl or vinylidene aromatic monomer and at least one sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomer; and
- 25 (b) polymer units derived from at least one
- (i) ethylene; or
- (ii) aliphatic alpha-olefin monomer having from 3 to 20 carbon atoms.
- 30 3. The composition of Claim 1 wherein the polymer comprises at least one substantially random interpolymer comprising:
- (a) polymer units derived from:
- (i) at least one vinyl or vinylidene aromatic monomer; and/or
- (ii) a combination of at least one vinyl or vinylidene aromatic monomer and at least one sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomer; and

(b) polymer units derived from at least one aliphatic olefin monomer having from 2 to 20 carbon atoms

4. The composition of Claim 2 wherein the interpolymer comprises:

- 5 (a) polymer units derived from one or more vinyl aromatic monomers and polymer units derived from ethylene;
- (b) polymer units derived from one or more vinyl aromatic monomers and polymer units derived from ethylene and one or more C₃ or C₂₀ alpha-olefins; or
- 10 (c) polymer units derived from one or more vinyl aromatic monomers and polymer units derived from a combination of ethylene and norbornene.

15. The composition of Claim 2 wherein the vinyl aromatic monomer is styrene.

20. The composition of Claim 2 wherein the interpolymer is selected from the group consisting of polymer units derived from:

- (a) ethylene and styrene;
- (b) ethylene and propylene and styrene;
- (c) ethylene and butene and styrene;
- (d) ethylene and pentene and styrene;
- (e) ethylene and hexene and styrene; and
- (f) ethylene and octene and styrene.

25. The composition of Claim 2 wherein the interpolymer comprises from 50 to 97 mole percent of polymer units derived from ethylene based on the total moles of monomer.

30. The composition of Claim 2 wherein the interpolymer comprises from 50 to 97 mole percent of polymer units derived from ethylene based on the total moles of monomer and polymer units derived from styrene.

9. The composition of Claim 1 wherein the polymer is a polymer comprising polymer units derived from ethylene.

10. The composition of Claim 9 which further comprises polymer units derived from a C₃-C₈ alpha-olefin.
- 5 11. The composition of Claim 10 wherein the alpha-olefin is selected from the group consisting of propylene, 1-butene, 1-pentene, 1-hexene, 1-heptene, and 1-octene.
12. The composition of Claim 9 which further comprises polymer units derived from vinyl acetates.
- 10 13. The composition of Claim 1 wherein the polymer is a styrenic block copolymer.
14. The composition of Claim 13 wherein the styrenic block copolymer is selected from the group consisting of styrene-butadiene copolymer and styrene-butadiene-styrene copolymer.
15. The composition of Claim 1 wherein the polymer is a polyvinyl chloride polymer.
- 20 16. The composition of Claim 1 wherein the polymer comprises polymer units derived from propylene.
17. The composition of Claim 1 wherein the anti-blocking agent comprises from 0.5 to 3 weight percent anti-blocking agent based on the total composition.
- 25 18. The composition of Claim 1 wherein the anti-blocking agent is selected from the group consisting of talc, mica, calcium carbonate, finely divided silica, fumed silica, organic acids, metal organic esters, and powdered polymers.
19. The composition of Claim 1 wherein the anti-blocking agent is talc.
- 30 20. The composition of Claim 1 wherein the anti-blocking agent is calcium stearate.

21. The composition of Claim 1 wherein the binding agent comprises from 0.05 to 1 weight percent binding agent based on the total composition.
- 5 22. The composition of Claim 1 wherein the binding agent is selected from the group consisting of polyether polyols, aliphatic hydrocarbon oils, alkanes having between seven and 18 carbon atoms optionally substituted with OH, CO₂H, or esters, alkenes having between seven and 18 carbon atoms optionally substituted with OH, CO₂H, or esters, natural oils, naphthenic oils, paraffinic oils, aromatic oils, silicon oils, plasticizers, tackifiers, and esters, alcohols, and acids of said oils, plasticizers, and tackifiers.
- 10 23. The composition of Claim 1 wherein the silicon oil is a siloxane polymer having the structural formula -Si(R₂R'₁)_n-0- wherein the R¹ groups are C₁-C₁₈ hydrocarbyl groups.
- 15 24. The composition of Claim 23 wherein R¹ is selected from an aliphatic group and an aromatic group.
- 20 25. The composition of Claim 24 wherein R¹ is methyl.
26. The composition of Claim 1 wherein the unconfined yield strength of the composition is at least about 20 percent less than the strength of the same composition without an anti-blocking agent.
27. The composition of Claim 2 which further comprises up to 50 percent of at least one other thermoplastic polymer.
- 25 28. The composition of Claim 27 wherein the at least one other thermoplastic polymer is selected from the group consisting of homopolymers and copolymers of polystyrene, polyethylene and polypropylene.

30

5

29. A composition comprising:
- (a) a substantially random interpolymer comprised of polymer units derived from ethylene and polymer units derived from styrene;
 - (b) from 0.5 to 3 weight percent of anti-blocking agent selected from the group consisting of talc and calcium stearate; and
 - (c) from 0.05 to 1 weight percent of a silicone oil binding agent.
30. A process comprising:
contacting polymer particles having a one millimeter penetration temperature of less than about 75°C as determined by thermal mechanical analysis or an unconfined yield strength of greater than 15 pounds per square foot (73 kilograms per square meter) with an effective amount of:
- (a) a binding agent capable of binding the anti-blocking agent to the polymer particles;
 - and
 - (b) an anti-blocking agent.
31. The process of Claim 30 wherein the binding agent and anti-blocking agent are simultaneously contacted with the polymer particles.
32. The process of Claim 30 wherein the polymer particles are first contacted with the binding agent and then contacted with the anti-blocking agent.
33. The process of Claim 30 wherein the polymer particles are first contacted with the binding agent and then contacted with the anti-blocking agent and then further contacted with binding agent, anti-blocking agent, or both.
34. The process of Claim 30 wherein the polymer is a substantially random interpolymer comprising:
- (a) polymer units derived from:
 - (i) at least one vinyl or vinylidene aromatic monomer; or

- (ii) a combination of at least one vinyl or vinylidene aromatic monomer and at least one sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomer; and
 - (b) polymer units derived from at least one aliphatic olefin monomer having from 2 to 20 carbon atoms.

5

35. The process of Claim 30 wherein the interpolymer is selected from the group consisting of polymer units derived from:

 - (a) ethylene and styrene;
 - (b) ethylene and propylene and styrene;
 - (c) ethylene and butene and styrene;
 - (d) ethylene and pentene and styrene;
 - (e) ethylene and hexene and styrene; or
 - (f) ethylene and octene and styrene.

36. The process of Claim 30 wherein the polymer is selected from the group consisting of an ethylene-alpha-olefin copolymer, an ethylene-vinyl acetate copolymer, a styrenic block copolymer, a polyvinyl chloride polymer, polypropylene, and propylene copolymers.

37. The process of Claim 30 wherein the anti-blocking agent comprises from 0.5 to 3 weight percent anti-blocking agent based on the total composition and wherein the anti-blocking agent is selected from the group consisting of talc, mica, calcium carbonate, finely divided silica, fumed silica, organic acids, metal organic esters, and powdered polymers.

38. The process of Claim 30 wherein the binding agent comprises from 0.05 to 1 weight percent binding agent based on the total composition and wherein the binding agent is selected from the group consisting of polyether polyols, aliphatic hydrocarbon oils, alkanes having between seven and 18 carbon atoms optionally substituted with OH, CO₂H, or esters, alkenes having between seven and 18 carbon atoms optionally substituted with OH, CO₂H, or esters, natural oils, naphthenic oils, paraffinic oils,

aromatic oils, silicon oils, plasticizers, tackifiers, and esters, alcohols, and acids of said oils, plasticizers, and tackifiers.

- 5 39. The process of Claim 30 wherein the binding agent is a siloxane polymer having the structural formula -Si(R¹R¹)-0- wherein the R¹ groups are C₁-C₁₈ hydrocarbyl groups and wherein the anti-blocking agent is selected from the group consisting of talc and calcium carbonate.
- 10 40. The process of Claim 39 wherein R¹ is methyl.
- 15 41. A composition comprising:
 (a) polymer particles having
 (1) a one millimeter penetration temperature of less than about 75°C as determined by thermal mechanical analysis; or
 (2) an unconfined yield strength of greater than about 15 pounds per square foot (73 kilograms per square meter); or
 (3) both (1) and (2);
 (b) an effective amount of an anti-blocking agent mechanically adhered to the polymer particles.
- 20 42. The composition of Claim 41 wherein the polymer comprises a substantially random interpolymer comprising:
 (a) polymer units derived from:
 (i) at least one vinyl or vinylidene aromatic monomer; or
 (ii) a combination of at least one vinyl or vinylidene aromatic monomer and at least one sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomer; and
 (b) polymer units derived from at least one
 (i) ethylene; or
 (ii) aliphatic alpha-olefin monomer having from 3 to 20 carbon atoms.

43. The composition of Claim 41 wherein the polymer comprises at least one substantially random interpolymer comprising:
- (a) polymer units derived from:
- (i) at least one vinyl or vinylidene aromatic monomer; or
- (ii) a combination of at least one vinyl or vinylidene aromatic monomer and at least one sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomer; and
- (b) polymer units derived from at least one aliphatic olefin monomer having from 2 to 20 carbon atoms
44. The composition of Claim 42 wherein the interpolymer comprises:
- (a) polymer units derived from one or more vinyl aromatic monomers and polymer units derived from ethylene;
- (b) polymer units derived from one or more vinyl aromatic monomers and polymer units derived from ethylene and one or more C₃ or C₂₀ alpha-olefins; or
- (c) polymer units derived from one or more vinyl aromatic monomers and polymer units derived from a combination of ethylene and norbornene.
45. The composition of Claim 42 wherein the vinyl aromatic monomer is styrene.
46. The composition of Claim 42 wherein the interpolymer is selected from the group consisting of polymer units derived from:
- (a) ethylene and styrene;
- (b) ethylene and propylene and styrene;
- (c) ethylene and butene and styrene;
- (d) ethylene and pentene and styrene;
- (e) ethylene and hexene and styrene; and
- (f) ethylene and octene and styrene.
47. The composition of Claim 42 wherein the interpolymer comprises from 50 to 97 mole percent of polymer units derived from ethylene based on the total moles of monomer.

48. The composition of Claim 42 wherein the interpolymer comprises from 50 to 97 mole percent of polymer units derived from ethylene based on the total moles of monomer and polymer units derived from styrene.
- 5
49. The composition of Claim 41 wherein the polymer is a polymer comprising polymer units derived from ethylene.
- 10
50. The composition of Claim 49 which further comprises polymer units derived from a C₃-C₈ alpha-olefin.
- 15
51. The composition of Claim 50 wherein the alpha-olefin is selected from the group consisting of propylene, 1-butene, 1-pentene, 1-hexene, 1-heptene, and 1-octene.
- 20
52. The composition of Claim 49 which further comprises polymer units derived from vinyl acetates.
53. The composition of Claim 41 wherein the polymer is a styrenic block copolymer.
54. The composition of Claim 53 wherein the styrenic block copolymer is selected from the group consisting of styrene-butadiene copolymer and styrene-butadiene-styrene copolymer.
- 25
55. The composition of Claim 41 wherein the polymer is a polyvinyl chloride polymer.
56. The composition of Claim 41 wherein the polymer comprises polymer units derived propylene.
- 30
57. The composition of Claim 41 wherein the anti-blocking agent comprises from 0.02 to 3 weight percent anti-blocking agent based on the total composition.

58. The composition of Claim 57 wherein the anti-blocking agent comprises from 0.08 to 1.5 weight percent anti-blocking agent based on the total composition.
- 5 59. The composition of Claim 58 wherein the anti-blocking agent comprises from 0.1 to 0.5 weight percent anti-blocking agent based on the total composition.
60. The composition of Claim 59 wherein the anti-blocking agent comprises from 0.15 to 0.3 weight percent anti-blocking agent based on the total composition.
- 10 61. The composition of Claim 41 wherein the anti-blocking agent is selected from the group consisting of talc, mica, calcium carbonate, finely divided silica, fumed silica, organic acids, metal organic esters, and powdered polymers.
- 15 62. The composition of Claim 41 wherein the anti-blocking agent is talc.
63. The composition of Claim 41 wherein the anti-blocking agent is calcium stearate.
64. The composition of Claim 59 wherein the anti-blocking agent is talc.
- 20 65. The composition of Claim 60 wherein the anti-blocking agent is talc.
66. The composition of Claim 41 wherein the anti-blocking agent is mechanically adhered to the surface of at least about 50 percent of the polymer particles.
- 25 67. The composition of Claim 66 wherein at least about 10 percent of the diameter of an individual anti-blocking agent is embedded into an individual polymer particle.
68. The composition of Claim 66 wherein up to about 50 percent of the diameter of an individual anti-blocking agent is embedded into an individual polymer particle.

69. The composition of Claim 41 wherein the unconfined yield strength of the composition is at least about 20 percent greater than the strength of the same composition without an anti-blocking agent.
- 5 70. The composition of Claim 42 which further comprises up to 50 percent (by weight) of at least one other thermoplastic polymer.
- 10 71. The composition of Claim 70 wherein the at least one other thermoplastic polymer is selected from the group consisting of homopolymers and copolymers of polystyrene, polyethylene and polypropylene.
- 15 72. A composition comprising:
(a) a substantially random interpolymer comprised of polymer units derived from ethylene and polymer units derived from styrene;
(b) from 0.15 to 0.3 weight percent of anti-blocking agent selected from the group consisting of talc and calcium stearate wherein the anti-blocking agent is mechanically adhered to the interpolymer particles.
- 20 73. A process comprising:
softening polymer particles having a one millimeter penetration temperature of less than about 75°C as determined by thermal mechanical analysis or an unconfined yield strength of greater than 15 pounds per square foot (73 kilograms per square meter) or both; and then
25 contacting said polymer particles with an effective amount of anti-blocking agent such that said anti-blocking agent is mechanically adhered to polymer particles.
- 30 74. The process of Claim 73 wherein said anti-blocking agent is adhered to the surface of at least about 50 percent of the polymer particles and wherein at least about 10 percent of the diameter of an individual anti-blocking particle is embedded into an individual polymer particle.

75. The process of Claim 73 wherein the anti-blocking agent is talc.
76. The process of Claim 73 wherein the anti-blocking agent comprises from 0.15 to 0.3 weight percent anti-blocking agent based on the total composition.
77. The process of Claim 73 wherein the polymer is a substantially random interpolymer comprising:
- (a) polymer units derived from:
- (i) at least one vinyl or vinylidene aromatic monomer; or
- (ii) a combination of at least one vinyl or vinylidene aromatic monomer and at least one sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomer; and
- (b) polymer units derived from at least one aliphatic olefin monomer having from 2 to 20 carbon atoms.
78. The process of Claim 73 wherein the interpolymer is selected from the group consisting of polymer units derived from:
- (a) ethylene and styrene;
- (b) ethylene and propylene and styrene;
- (c) ethylene and butene and styrene;
- (d) ethylene and pentene and styrene;
- (e) ethylene and hexene and styrene; or
- (f) ethylene and octene and styrene.
79. The process of Claim 73 wherein the polymer is selected from the group consisting of an ethylene-alpha-olefin copolymer, an ethylene-vinyl acetate copolymer, a styrenic block copolymer, a polyvinyl chloride polymer, polypropylene, and propylene copolymers.

5

80. The process of Claim 73 wherein the anti-blocking agent comprises from 0.5 to 3 weight percent anti-blocking agent based on the total composition and wherein the anti-blocking agent is selected from the group consisting of talc, mica, calcium carbonate, finely divided silica, fumed silica, organic acids, metal organic esters, and powdered polymers.
81. The process of Claim 73 wherein the surface of the particles is melted by hot air, radiation, contact heating, or a combination thereof.
- 10 82. The process of Claim 73 wherein the surface of the particles is melted to a depth sufficient to bind an effective amount of anti-blocking agent.
- 15 83. The process of Claim 73 wherein
the surface of the particles are melted by hot air, radiation, contact heating, or a combination thereof;
 - (a) the interpolymer has polymer units derived from ethylene and styrene;
 - (b) the anti-blocking agent is talc and is present from 0.15 to 0.3 weight percent of the composition; and
 - 20 (c) the anti-blocking agent is in a substantially homogenous thick layer having a thickness of from the diameter of the agent to about 5 times the diameter of the agent.